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## Subspeciation in *Erythropygia coryphoeus* (Vieillot) of the Southwest Arid Zone of Africa

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The Karoo Scrub-Robin *Erythropygia coryphoeus*, which has recently had the authorship of its scientific binomen adjusted from *Sylvia coryphaeus* Lesson, 1831, to the earlier *Sylvia coryphoeus* of Vieillot, 1817, following the findings of Rookmaaker (1989)—see also Brooke & Clancey (1990)—is a small sombrely coloured endemic robin of karoo scrub and acacia thickets of the southern parts of the Southwest Arid Zone of the Afrotropics. It is distributed from south-central Namibia from the Naukluft National Park and the northern Cape, south to the entire Cape south of the Orange R., extending east to the western limits of the Transkei at Cofimvaba (Quickelberge 1989), the western lowlands of Lesotho and the drier west of the Orange Free State to about 28° E. There is little evidence that it is other than mainly sedentary. It is closely allied to another scrub-robin, *Erythropygia paena* (Smith), with which it is sympatric from the basin of the mid-Orange R. northwards. The two species are in the main allopatric, but their ranges overlap widely in association with the transition of plant community facies from karroid type to the *Acacia*/grass country complex of the Kalahari ecosystem. There is no evidence that the species hybridize in their zone of sympatry where they are often to be encountered on the same ground. Their joint distribution pattern suggests that *coryphoeus* resulted from a primal colonising event and *paena* from a later one, the staggered radiation also involving the Rufous Scrub-Robin *E. galactotes* of the Palearctic and the arid parts of the northern Afrotropics.

Many workers now merge the genus *Erythropygia* Smith, 1836, spp., with *Cercotrichas* Boie, 1831, the sole species of which is *Cercotrichas podobe* Boie, 1831; but Ripley (1964), Wolters (1980) and Dowsett & Dowsett-Lemaire (1993) recognise the two genera, with *Cercotrichas* monotypic and *Erythropygia* polytypic. It was decided to follow likewise and view *coryphoeus* as a constituent species of the genus *Erythropygia*, with *E. paena* as unquestionably congeneric, as is *E. galactotes*.

As shown by Macdonald (1952), variation in the present scrub-robin, initially believed to be sexually based, was first detected by Levaillant (1801–04), but it was not until the publication of Macdonald's findings that the true nature of such variation was shown to be ecologically and geographically rather than sexually linked. Macdonald also concluded that at that stage it was desirable to recognise only a relatively grey race of the desertic coastlands of the western and southwestern Cape, induced climatically by the influence of the cold water inshore upwelling of the Benguela Current, and a browner interior complex of populations. He treated the first as *E. c. cinerea*, a new subspecies, and the rest as comprising the nominate race, but recent study based on the ample fresh material now available in southern African museum collections has shown the desirability of recognising it as a form confined to the Karoo biome, the populations occurring both to the north and northeast of it attributable to two other subspecies. These are *E. c. abbotti* in the Kalahari/Karoo ecosystem transition in the west, and *E. c. eurina* Clancey, 1969: Glen, Modder R., Orange Free State, of the eastern plateau grasslands of the South African Subregion.

Prior to the publication of Macdonald's findings, *E. coryphoeus* had already been shown as probably polytypic by Friedmann's naming of *E. c. abbotti* from the Great Fish R., Great Namaqualand, Namibia, in 1932, which sometime later was shown to have been proposed on individual rather than geographic variation in the size of the white tips to the rectrices. While treated as synonymous with the nominate race (see Clancey 1959 and 1980), a re-examination of virtually all the material in south-African collections (some 328 specimens in all) shows that the xeric populations present in southern Namibia and the lower basin of the Orange R. should be kept separate from those of both the Karoo and the eastern grasslands of the species' range. On the basis of revised plumage characters and determination of a precise range, *E. c. abbotti* can be justifiably resuscitated as indicated above.

Of the brownish populations of the Karoo Scrub-Robin, the darkest are those of the Karoo biome, these being replaced to the north and north-east by lighter birds with the breast markedly paler. Of these differentiates, the southern Namibian and lower Orange R. birds are distinguishable from the ones occurring in the eastern Grassy Karoo, *E. c. eurina*, by the more extensively white throat, the still paler breast and less reddish flanks, but with the tertials, secondaries and wing-coverts markedly edged with tawny. It is significant that the combined ranges of *abbotti* and *eurina* encompass much of the zone of *E. coryphoeus* and *E. paena* overlap, which extends west to east from Namibia and the northern Cape to 28° E. in the Orange Free State.

TABLE 1

Wing-, tail- and culmen-lengths (mm) of the four subspecies of the Karoo Scrub-Robin  
*Erythropygia coryphoeus*

			<i>n</i>	Range	Mean	s.d.
<i>E. c. cinerea</i>	♂	Wing	10	68–77.5	73.5	3.40
		Tail	10	62–72	67.0	3.73
		Culmen	10	16–18	17.1	0.74
	♀	Wing	10	65–71.5	68.9	1.86
		Tail	10	62.5–72	66.9	3.74
		Culmen	10	15.5–17.5	16.6	0.66
<i>E. c. coryphoeus</i>	♂	Wing	10	68–77.5	74.3	2.85
		Tail	10	63.5–75	71.5	3.34
		Culmen	10	16–18	17.3	0.75
	♀	Wing	10	70–81	74.7	3.45
		Tail	10	65–73.5	70.5	3.46
		Culmen	10	15.5–18	16.8	0.78
<i>E. c. abbotti</i>	♂	Wing	10	74–81	76.3	2.12
		Tail	10	70–76.5	72.9	2.31
		Culmen	10	16–17.5	17.0	0.57
	♀	Wing	10	70–80	73.9	3.84
		Tail	10	67–76	70.5	2.76
		Culmen	10	16–18	17.2	0.63
<i>E. c. eurina</i>	♂	Wing	10	73.5–78	76.1	1.66
		Tail	10	68.5–76	72.1	2.08
		Culmen	10	16–17.5	16.8	0.48
	♀	Wing	10	70–75	72.2	1.53
		Tail	10	68–76	70.4	2.29
		Culmen	10	16–18.5	17.4	0.73

*Note.* *E. coryphoeus* exhibits little in the nature of clear-cut geographically related size-variation, the largest birds occurring in the populations of *E. c. abbotti* in Namibia and adjacent areas in which males and females have wings to 80 mm and above. The smallest birds crop up in the maritime populations of *E. c. cinerea* and *E. c. coryphoeus* in the western and southern Cape. In all four races males average larger than females, but with much overlap in both wing and tail measurements.

Four subspecies of the Karoo Scrub-Robin can be recognised, as follows; see also Table 1 and Figure 1.

*Erythropygia coryphoeus cinerea* Macdonald, 1952: 26 km N. of Port Nolloth, northwestern Cape.

Dorsal head and hind-neck greyer than in *E. c. coryphoeus* (greyish Mummy Brown; Ridgway 1912), the mantle and scapulars still duller and greyer. On under-parts with the fore-throat more broadly white; entire breast and side light neutral grey, the caudad feathers narrowly fringed white. Wings in adults with light brown edging to tertials, secondaries and coverts. Tail browner black than in nominate *E. coryphoeus*. Material examined: 74, including *E. c. cinerea*  $\geq$  *E. c. coryphoeus* intergrades.

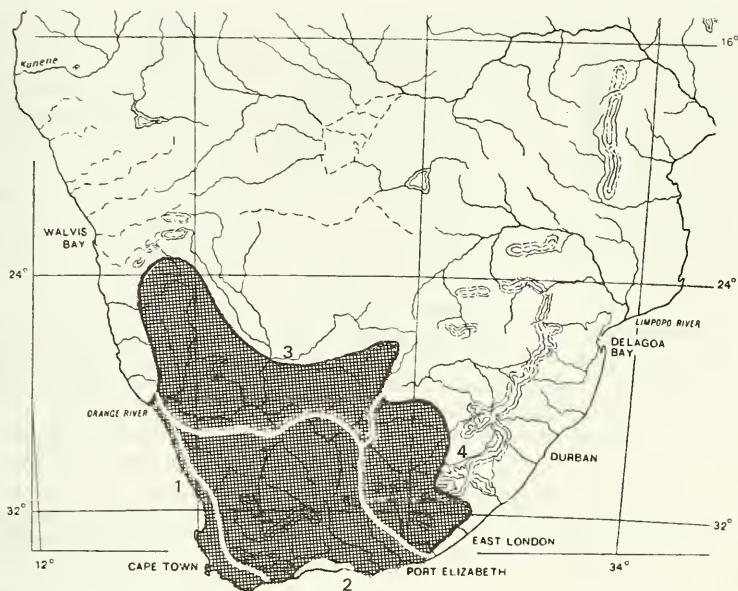


Figure 1. Sketch-map of the Southern African Subregion showing the distribution of the Karoo Scrub-Robin and the disposition of its four subspecies: 1, *Erythropygia coryphoeus cinerea*; 2, *E. c. coryphoeus*; 3, *E. c. abotti*; 4, *E. c. eurina*.

*Range.* Extends narrowly along the coast from southwestern Namibia and the mouth of the Orange R. to the coastlands of Little Namaqualand, Cape Province, south to the Cape of Good Hope, thence southeast to Cape Agulhas and the Bredasdorp district. Intergrades irregularly with nominate *coryphoeus* to the east of the given range. Habitat: dry scrub of desertic coast on whitish sands; rainfall <120 mm.

*Remarks.* Racial intergrades were examined from Klipfontein, Springbok, Kamieskroon, Kliprand, Vanrhynsdorp, near Bredasdorp and elsewhere. Coastal dune-scrub material of *cinerea* tends to be often badly bleached and eroded through direct contact with wind-borne salt spray. Wings may be bleached white.

*Erythropygia coryphoeus coryphoeus* (Vieillot), 1817: Uitenhage district, southeastern Cape.

In fresh dress (April–July) with pileum and hind-neck dark greyish Olive-Brown; mantle and scapulars near Saccardo's Umber with grey patina; malar-streaks and sides of lower throat darkish medium grey, this diffused caudad over most of the breast; flanks buffy and ventral streak to under tail-coverts pale buff. White fore-throat laterally constricted. Tail black and wings dark brown, with light brown edging to flight-feathers and coverts. Material examined: 145.



*Range.* Cape immediately east of *E. c. cinerea* from Little Namaqualand and the Succulent Karoo, south to the southern Cape, extending eastwards through the Karoo biome to West Griqualand in the north-east and adjacent southwestern Orange Free State (at Luckhoff and near Smithfield), Colesberg in the north-eastern Cape, and south reaching the Sundays R. drainage and about Uitenhage in the southeast. Habitat: Karoo; Rainfall 120–500 mm.

*Remarks.* The occurrence of the present subspecies in the southwestern parts of the Orange Free State and adjacent northeastern Cape on the Orange R. may be a result of localized eastwards spread of the Karoo biome stemming from poor farming practices in that part of South Africa in recent times. A variable subspecies, and like *cinerea* much affected by solar bleaching and plant erosion, but not whitening as in the case of the aforesaid race. The strong wash of grey to the lower sides of the neck and upper breast and very dark upperside in fresh condition readily distinguish it from the adjacent *E. c. eurina*.

While generally conceded as sedentary, some individuals of the present race may extend north of the breeding grounds in winter, as suggested by a characteristic adult of the present race taken at Maltahöhe, Namibia, on 2 June 1971 (South African Museum collection), but alterations made to the label indicate the possibility of an error in its data.

*Erythropygia coryphoeus abbotti* Friedmann, 1932: 16.1 km from Berseba, Great Namaqualand, Namibia.

Lighter and buffier brown than *E. c. eurina* (see below), the pileum and hind-neck lighter, and back, rump and wings more ochraceous-brown. Below, with a broader white fore-throat streak, and sides of neck and entire breast virtually plain buffish, without the grey present in *eurina*, and mid-venter, crissum and under tail-coverts buffish rather than white. In wings, tertials, secondaries and coverts often edged Tawny-Olive. Material examined: 44. *Namibia*: Oranjemund, Ai-Ais, Seeheim, Keetmanshoop, Maltahöhe, Helmeringhausen, Berseba, Bethanien, Assab, Groot Nabbas; *Cape*: Holgat R., Kuboes, "Hell's Kloof" (Richtersveld), Blomhoek (Bushmanland), Pofadder, W. of Upington, Buchuberg, Kenhardt, Kuruman, Vryburg.

*Range.* Central and southern Great Namaqualand from the Naukluft National Park to the lower Orange, and north-western Cape in the Richtersveld and Bushmanland, east north of the river as far as Kuruman and Vryburg. Intergrades to the south of its range with *E. c. coryphoeus* and *E. c. cinerea*. Habitat: Semidesert/dry Kalahari savanna. Rainfall 0–250 mm.

*Remarks.* The characters given for this taxon by its describer were simply those of individual variation in a limited sample.

*Erythropygia coryphoeus eurina* Clancey, 1969: Glen Lyon Farm, Glen, Orange Free State.

Compared with *E. c. abbotti*, the pileum and hind-neck are much darker (about Sepia), the rest of dorsum and wings less markedly ochraceous, but not as dark and earthen brown as in nominate *coryphoeus*. On underside, with a narrow white fore-throat streak, much

as in *coryphoeus* from which it differs in having the breast, sides and flanks light vinaceous-cinnamon without a greyish patina, the ventral grey light and restricted to the malar streaks. Mid-ventral surface to the under tail-coverts white. Material examined: 65.

*Range.* Northeast and east of nominate *coryphoeus* of the Karoo biome, extending from the headwaters and immediate east of the Great Fish R. in the east of the Cape to the Orange Free State, except for the southwestern corner, to 28°E, the lowlands of northern and western Lesotho and to western Transkei (at Cofimvaba). Habitat: mainly grassveld/karoo transition (=Grassy Karoo); rainfall >250–1000 mm.

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